Amendments to the Specification:

~~Please add the following new paragraph on page 1, after line 3.~~

--CROSS REFERENCE TO RELATED APPLICATION

A1 Reference is made to and priority claimed from U.S. Provisional Application Serial No. 60/102,786, filed 02 October 1998, entitled "Image Processing for Improvement of Color Registration in Digital Images".--

Please replace the paragraph beginning on page 10, line 1 with the following rewritten paragraph:

-- In a second technique for estimating misregistration, a robust measure of color image translation and rotation error can be computed as a natural step of a well-established procedure for the evaluation of digital cameras. The ISO 12233 standard (see also T.A. Fischer and J. Holm, "Electronic Still Picture Camera Spatial Frequency Response Measurement", *Proc. of IS&T 47th Annual Conf./ICPS 1994*, vol. 2, pp. 626-630 (1994) and D. Williams, "Benchmarking of the ISO 12233 slanted-edge spatial frequency response plug-in", *Proc. of IS&T Annual Conf.*, (1998)) for evaluating the spatial frequency response of digital cameras describes the use of a slanted edge target feature. While the ISO 12233 procedure was not intended as a technique for measuring color misregistration, and its use for this purpose is not mentioned or taught in any publication prior to this application, it has been found to provide a robust measure of misregistration. The steps included in the ISO12233 procedure are outlined in Fig. 2, where the edge is assumed to be oriented in a near-vertical direction. In summary, the procedure uses the gradient (initially computed in a step 4) of a slanted edge to derive a super-sampled profile of the edge (derived in step 7 and stored in data "bins" in step 8) for use in deriving (in a transform step 9) a spatial frequency response via edge gradient analysis. To do so, however, the edge location and direction (in the form of an linear equation) are estimated. Note that at step 6 the equation is fit to the location of the centroid of each line of the edge derivative, as calculated in previous steps 4 and 5. An implementation of this method that provides this fit for each color record is used as a direct measure of edge location within the NxM region of interest (ROI). Specifically, the equation for the linear

A2 Cont

fit to the set of line centroid data can be expressed as the inverse of the usual linear equation

$$x = a + b\ (y\text{-}1)$$

where x is the x-direction (pixel) location, y the y-direction (line) number [1, 2, ...N] and a, b are constants. The value of a is the location of the edge on the first line of the region of interest (ROI), which in this case is the slanted edge target feature. The value of b gives a measure of the edge slope - an indication of misregistration due to rotation. Since the ROI is chosen to be identical for each color record, the corresponding values of a and b are expressed in the same coordinates and their difference indicates the degree of misregistration. The above procedure was implemented in software and tested. The results were found to give accurate and reliable estimates of the color record translation error.—

Please replace the PARTS LIST beginning on page 16 with the following rewritten PARTS LIST:

--PARTS LIST

1	detection stage
2	digital filter design stage
3	digital filtering stage
4	gradient step
5	centroid step
6	equation fitting step
7	filtered data projection step
8	data storage step
9	transform step
15	color record repeat step
20	modulus storage step
22	phase function calculation
24	real and imaginary storage
26	inverse DFT computation
28	truncation

30 DFT computation

32 response evaluation

34 window function

36 filter storage

~~38 feedback loop~~

~~39~~ 110 computer system

112 microprocessor-based unit

114 display

116 keyboard

118 mouse

120 selector

122 CD-ROM

124 CD

126 floppy disk

127 network connection

128 printer

130 PC card--